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14. ABSTRACT

The asymmetric nature of the global war on terrorism (GWOT) has fundamentally changed the scenarios in which Joint doctrine operates. A question may be raised whether or not Joint air doctrine is suitable for employment in the GWOT without a comparative modification in scale of the difference between the Cold War and GWOT scenarios. This question can be answered in the lessons learned from recent employment of Joint air power. Tactical lessons learned may either reflect exploitable seams in current Joint air doctrine or display a unity of effort that exhibits the strength and adaptability of that doctrine. The execution of doctrine has produced a unity of effort across the Joint Force that generates solutions to possible gaps in current Joint doctrine. Rather than displaying an outdated doctrine for the asymmetric threat in the GWOT, recent operations have shown the versatility and adaptability of the doctrinally-based Joint Force that can close potential gaps in doctrine.

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Joint Air Doctrine in the Global War On Terror

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract

The asymmetric nature of the global war on terrorism (GWOT) has fundamentally changed the scenarios in which Joint doctrine operates. A question may be raised whether or not Joint air doctrine is suitable for employment in the GWOT without a comparative modification in scale of the difference between the Cold War and GWOT scenarios. This question can be answered in the lessons learned from recent employment of Joint air power. Tactical lessons learned may either reflect exploitable seams in current Joint air doctrine or display a unity of effort that exhibits the strength and adaptability of that doctrine. The execution of doctrine has produced a unity of effort across the Joint Force that generates solutions to possible gaps in current Joint doctrine. Rather than displaying an outdated doctrine for the asymmetric threat in the GWOT, recent operations have shown the versatility and adaptability of the doctrinally-based Joint Force that can close potential gaps in doctrine.

The development of Joint air doctrine occurred within a large-scale, multi-theater war framework of Cold War scenarios. The primary use of Joint air power in the past decade, however, has been smaller scale contingencies against a vastly overmatched foe. The near-peer military competitor in the post-Cold War environment has failed to materialize. The asymmetric nature of the global war on terrorism (GWOT) has fundamentally changed the scenarios in which doctrine operates. A question may be raised whether or not Joint air doctrine is suitable for employment in the GWOT without a comparative modification in scale with the difference between the Cold War and GWOT scenarios. In response, this question can be researched in the lessons learned from recent employment of Joint air power. Tactical lessons learned and articles published in Service periodicals either reflects exploitable seams in current Joint air doctrine or display a unity of effort that exhibits the strength and adaptability of that doctrine.

The illustrative examples used here will show that the execution of doctrinal structures and procedures has produced a unity of effort across the Joint Force that can generate solutions to possible gaps in current Joint air doctrine. Rather than displaying an outmoded or ineffective doctrine for the asymmetric threat in the GWOT, recent operations show that the execution of a versatile and adaptable doctrine-based Joint Force determines whether or not exploitable gaps are closed.

This paper is presented in several sections. A brief review of fundamental aspects of Joint air doctrine to underscore the analysis is followed by several tactical lessons learned as applied to the operational level of warfare. Illustrative lessons learned from Special Operations forces operating in an undeveloped theater to a component

coordination center in Operation IRAQI FREEDOM highlight important issues with respect to the execution of current Joint air doctrine and provide a look into the execution of the doctrine in the GWOT. Following the examples of lessons learned, an expanded analysis provides additional points for consideration to the execution of doctrine as being the primary means to alleviate possible vulnerabilities in doctrine. Concluding remarks summarize the analysis of the applicability of Joint air doctrine in the context of the GWOT.

The Joint Force Commander (JFC), staff and subsequent organization of the Joint Force capabilities and forces are established under the guidance of Joint doctrine. A Joint Force Command contains Service Component Commands and normally the functional component commands of air, land, sea and special operations.[1] The functional component commands may have their command authority delegated to the Service component commander with "the preponderance of available specific functional assets [and the ability to effectively plan, task and control (function) operations]."[2] The Joint Force Commander also has the responsibility to define the authorities and responsibilities of the functional commanders, such as operational control, tactical control and supporting/supported relationships.[3] The designation of a Joint Force component command does not automatically prioritize the respective Service component's assets to the Joint force. Rather, the decision to make available component force assets to the Joint force is made by the respective component commander. This facet of Joint doctrine characterizes unity of effort and is one part of three foundational aspects of our Joint doctrine that include centralized command and decentralized execution.[4]

As further detailed in Joint Publication 3-30, a designated Joint Force Air Component Commander (JFACC) carries the duties of generating a Joint Air Operations Plan. This airplan coordinates and directs the air assets and capabilities made available through a specified JFC decision process that apportions the use of components air assets and capabilities across the Joint Force. This is similar to the other functional components, yet air assets and capabilities generally are able to affect a relatively greater portion of the theater of operations merely by the physics of airspeed, altitude and man-in-the-loop control. As such, the JFACC "will normally be delegated the authority to conduct execution planning, coordination, and deconfliction associated with joint air targeting."[5] While developing the Joint airplan to "synchronize, integrate, de-conflict, allocate [and match weapons to targets]," doctrine further states that "all components should provide the JFACC a description of their air plan to minimize the risk of fratricide, assure deconfliction, avoid duplication of effort, and to provide visibility to all friendly forces…for coordination and deconfliction of targeting efforts between (joint force) components"[6] The nature of these dual functions for the JFACC team of generating a joint air power master plan while deconflicting component air asset sorties, especially for the joint targeting process, is one aspect that explains the emphasis given to the joint air targeting cycle in doctrine. The necessity for continuous communication, coordination and control of air power in the theater of operations is understood and established in Joint doctrine. This necessity does not equate to a greater emphasis on air power in comparison to the other components, but a reflection of the need to manage the scope of air capabilities from and to the Joint Force components.

The question of whether or not Joint air doctrine is suitable for employment in the GWOT can be analyzed in the lessons learned reports and published articles from recent operations. Though most of the articles and compiled lessons learned do center on tactical issues, their applicability to the operational level of warfare and Joint doctrine can be ascertained.

An article from a Special Operations viewpoint is used as an illustrative example.[7] The Special Operation teams in Afghanistan held an unfamiliar position in relation to a standard Joint force makeup as it was the large land force in country instead of the conventional Army. The "noncontiguous battlefield" contained Special Operations forces working with the indigenous Northern Alliance resistance forces. The two Joint Special Operations Task Forces (JSOTF North and South) and their relationship to the Combined Air Component Commander (CFACC) initially lacked two important distinctions. The command relationship between components was ill-defined and no Joint Special Operating Areas were designated to reference fire support control measures. These two "brought out some key challenges in traditional thinking of [joint air support to ground forces maneuvering against a non-traditional enemy]." JSOTF North and South were operating as traditional land forces that require air support instead of the longstanding precedent role as sensors on the ground supporting air power with target designations and forward air controller duties. The CFACC was conducting strategic and air interdiction missions across the theater while the JSOTF teams had not established an effective communication link at their headquarters to generate proper air support requests for air interdiction and close air support. As a maneuvering land force requiring air support, the lack of a formal designated relationship between the two components led to a

lack of clear control and unity of effort. The underlying reason for the disjointed operations of the two components lay in the lack of the command and control element at the Special Operations headquarters and training of that element for the coordination tasks.

Most of the workarounds developed by the two staffs was done informally but solidly in accordance with Joint doctrine. For example, the JSOTF established a "more robust [coordinating capability at their headquarters that copied] the Army's Air Support Operations Center structure."[8] A "ground directed interdiction" method of designating targets to the air assets was created in order for CFACC to better support maneuvering JSOTF elements. Further, the Special Operations Liaison Element at CFACC headquarters is described as requiring "dedicated and trained maritime and ground expertise, similar to that of the Army's Battlefield Coordination Detachment, in order to better represent the Special Operations Command and JSOTF commanders during the [joint air power targeting cycle]."[9]

The unity of effort by the staffs to achieve Joint Force objectives was guided by doctrine, and this example from Special Operations in Afghanistan seeks to validate the doctrine. Each component command staff should use published doctrine to train, exercise and fight under. The learning and use of Joint air doctrine by these forces to adapt to the battlefield environment using the doctrinal structure displayed the versatility vice limitation of Joint doctrine when used in this GWOT scenario.

A second article for an illustrative example comes from an Army Battlefield Coordination Detachment (BCD) experience during Operation IRAQI FREEDOM. The relationship between components of the Joint Force as delineated in Joint doctrine

provides for solid unity of effort. Yet even in an operation of this magnitude execution within a Joint doctrine structure can display joint system integrations that need improvement.

The BCD was located at the CFACC headquarters as the land component commander's liaison element. The article describes several disconnects between the Air Force theater battle management core system software (used to generate the daily Air Tasking Order (ATO)) and the Army battle command system software.[10] Avoiding the long list of acronyms for communication systems, the human integration required to facilitate assumed information technology automatic processes became more than a database management inconvenience for the BCD staff. Due to the inherent coordination-intensive data collection, dissemination and control functions that the JFACC staff performs to produce a daily ATO, this article states that near-term improvement in the Joint fight can be had to "significantly aid the planning, coordination and execution of air-ground integration at the operational level [by investing] in joint and service command, control, communications, computers and information systems (C^4I)."[11] The Joint Air Tasking Cycle that the BCD was working under is doctrinally "conducted through an interrelated series of information exchanges and active involvement in plan development, target development, and air execution…which provide a means of requesting and scheduling joint air missions."[12]

The article describes the functionalities of the Army and Air Force systems and the techniques developed to overcome the interoperability problems. The workarounds to integrate the information systems were rapidly developed across the staffs in order to provide the Joint force that unity of effort required to maximize the use of air-land

components, the very nature of Joint warfare that the doctrine publications champion. The article explains the integration solutions that were used and proposes several improvements that leave the doctrinal structure in place, providing a point of validation to Joint doctrine of the flexibility afforded the components.

A second problem listed in the BCD experience covers the integration issues in relation to targeting mobile targets and the time sensitive nature that stresses coordination lines between Joint components. The process of generating air support requests from Army forces in the field, vetting those requests through the Army chain of command and compiling the lists at the BCD for nomination to the CFACC proved unworkable for mobile targeting at the pace of the land component advance. Due to the "[time required for] every echelon to collate, validate and eliminate duplication," in addition to information system manipulations, one workaround generated a standard operating procedure to task air sorties against a geographic area instead of the known location of a mobile target. The air assets could then prosecute a mobile target under the guidance of a forward air controller in that geographic area.[13]

However, expanding this concept to a theater-wide standard for targeting as the article recommends in order "to make the air tasking order far more responsive to mobile targeting requirements than it currently is"[14] doesn't fully recognize the operational level of the ATO. The Joint air process cannot be reduced to strike coverage theater-wide for time sensitive targeting on the scale proposed here by the BCD. The consternation with the "three days in advance" requirement for air support requests from the land component, specifically referring to the ATO generation timeline, is a fundamental misunderstanding of the ATO function. Rather than a tactical airplan that predicts air and

ground forces' targeting requirements, it is a coordination plan to apportion available air assets theater-wide. It is better suited and managed at the strategic and operational levels of the conflict, while still allocating tactical missions in support of the JTF components. The use of changes to the ATO via dynamic re-tasking is more an execution lesson learned than a doctrinal error in this instance.

The air operations cell at the JFACC did stand up a time-sensitive targeting cell for strikes against certain target types,[15] another feature of adaptable means of execution using Joint doctrine. Further, it does generate doctrine update discussions in response to current operations. The next section details the issue of time-sensitive targeting doctrine but notice the BCD efforts here to improve execution in the GWOT support the doctrine of Joint air support of task force objectives. The lesson learned brought forward by the BCD is that the execution underneath doctrine has areas for improvement for Joint Force success in similar future scenarios.

In a similar discussion of time-sensitive targeting, the Army Center for Lessons Learned released a report in late 2003 which describes the "time constraints" of a 72-hour air tasking cycle in relation to the speed of modern combat advance and near-real time intelligence capabilities.[16] The Air Force responded to the claim by explaining that the process of generating the ATO to coordinate the quantity of air assets in the theater enabled the ability to re-target airborne sorties instead of restricting it.[17] The doctrine of Joint air power and the processes that govern them may generate these type of questions from a component viewpoint but the true lessons learned from recent conflicts is stated by the Army's report: execution of Joint warfare on the ever-changing battlefield requires adaptation for current operations that may raise matters of doctrine, but tactical

complications must be assessed at the doctrine level instead of taking doctrine down to the level of tactics for assessing its validity.

A noteworthy aspect of the GWOT is a tendency for a greater portion of targeting to have a time sensitive nature. Reflected in Service and Joint lessons learned, this tendency to shorten the targeting cycle goes beyond conventional battlefield requirements for this capability. That a compressed targeting timeline stresses the tactical lines of communication for any organizational structure is a given but this shortened timeline approach potentially reaches to the operational and strategic levels of the conflict. Tactical execution is not the subject here, but the operational doctrine to assess and produce an organization that can respond to the threat rapidly if necessary or desired. Joint air doctrine does address this matter, reflected in Joint Publication 3-60, but follow-on procedures and updates to doctrine are also in work.

The Air Land Sea Application Center (ALSAC) has produced a "multi-service" procedures document for time-sensitive targeting as a possible lead-in for Joint doctrine inclusion. Leveraging the discussion from Joint air targeting doctrine which either cannot or does not contain enough granularity for mission execution, this publication seeks to "[assist] the Services and joint or combined force commanders in developing operations, organizing teams, and clarifying responsibilities to speed the time-sensitive targeting process for prosecuting [time sensitive targets]. This [publication] describes timely, effective multi-Service solutions to coordinate, deconflict, synchronize, and prosecute [time sensitive targets] within any area of responsibility."[18]

One of the areas of contention due to the inherent time compression aspect is the automation of coordinating information between Joint Force components and other

functional organizations. Every component and agency generating targeting information for the Joint Force "should be able to 'plug in' and have visibility into all [time sensitive targets] being monitored as required via collaboration tools…"[19] This Joint Force concern was one of the lessons learned at the component view from the BCD article discussed previously. But not only should the targets being nominated and monitored have visibility to every component force but the *priority* of those targets to the Joint Force should be conveyed on the collaboration tool.[20] The effectiveness of the Joint air targeting cycle to meet Joint Force Commander's objectives may have great dependence on this time sensitive targeting ability.

Current Joint air doctrine also weighs in with these interoperability concerns. Sharing time sensitive targeting "information requires systems that can use this common language and correlate individual component requirements and communicate them simultaneously to all components."[21] It further delineates the issue by stating that "developing solutions to interoperability problems will normally require staffs to explore and experiment with various options working to find joint solutions rather than single-Service remedies."[22] The tactical concerns raised in the BCD article may have workarounds as they produced, but is this enough to emphasize the necessity for Joint interoperability, especially in the air component, in order to meet the time-sensitive targeting mission? These examples show that doctrine development in parallel with tactical lessons learned is underway and reflects the robust nature of Joint doctrine.

The ALSAC publication further recommends command and control structures for each functional component that are built from current doctrinal structures. Acknowledging that the organization for the air component is derived from the organic

Air Force capability, it also notes the refinements are based upon lessons learned from Operations ALLIED FORCE, ENDURING FREEDOM and IRAQI FREEDOM.[23] The structure described to handle the time-sensitive targeting mission is only a modification of current doctrine structures and displays the flexible but sturdy baseline doctrine affords. Coordination and collaboration, the essentials of Joint execution, are appropriately left to the Services that bring capabilities to the Joint Force. As lessons learned are compiled and acted upon, such as reflected in the ALSAC publications, even if generated at the tactical level, analysis shows the operational level effects that may be achieved by their adoption.

Several other illustrative examples of tactical execution issues in the Joint fight show that at the operational level of warfare the standards of doctrine were sought by tactical units. Basic issues such as supporting and supported relationships, use of joint terminology across the Joint Task Force, properly using operational and tactical control, and forming component staffs that are representative of the employed forces belong in Joint wargaming after-actions rather than reports from Operation ENDURING FREEDOM.[24] Confusion over mission terminology in the tactical realm of time sensitive targeting, the operational aspects of which were discussed above, made the lessons learned list from U.S. Central Command. Interesting enough, the recommendation for the Combatant Commander to more clearly define the time sensitive targets terminology was refuted in the comments section of the submittal because the Joint terminology responsibility resides at the Joint Staff level vice the combatant commander level.[25] Operational versus tactical control of U.S. Marine Corps EA-6B assets for the CFACC and the 1st Marine Expeditionary Force also provided a Joint lessons learned submittal, as

confusion between components resulted in the assets being tasked from both components.[26] A recommendation for applying current doctrine to theater airlift assets with tactical control to the CFACC shows the desirability of doctrinal standards.[27] Another clear example comes back to the Special Operations component in Afghanistan where the use of Global Positioning System-aided munitions for close air support brought beyond-line-of-sight bomber aircraft in support of friendly forces in contact with the enemy. The recommended lesson learned was for the doctrine of close air support to stand unchanged rather than the new weapon capability to change doctrine.[28]

This discussion of lessons learned from recent operations, as illustrative examples, detail the integration and coordination required in Joint air warfare. The basic tenets of "jointness"-centralized command, decentralized execution and unity of effort are readily apparent in these examples. Descriptions of the lack of interoperability seek greater unity of effort under the decentralized execution tenet. The calls for greater responsiveness in Joint targeting and air apportionment point to improving the centralized command without infringing on decentralized execution. The call from these lessons learned is for refinements in execution that are within a component's current or planned future ability.

The lack of fully integrated command and control information systems as illustrated in the BCD article points to problems in execution for the Joint Force in preparation for contingencies. The Joint Force seems to be learning "on the job" or "in theater" instead of prior to deploying. Until Joint interoperability for the execution phase pervades the Services acquisition and training parameters, unique aspects of information systems for battle management or common operating picture will assuredly center upon

Service component needs vice the Joint Force functional component requirements. U.S. Joint Forces Command is given the explicit task of "supporting the development and integration of fully interoperable systems and capabilities" under the Unified Command Plan. The "supporting" function, however, does not have the weight of directing the Services in their procurements.

The execution of time-sensitive targeting, illustrated in the JSOTF and BCD articles, brings out issues of the Joint Force air apportionment process. Is current doctrine driving the component air support and air targeting nomination process through an unwieldy command and control process? The doctrine could be modified to describe two air apportionment categories, one for strategic and operational level targeting and the other for more time-sensitive targets. Components could then submit strategic and operational level targets for their respective areas of responsibility to be vetted at the Joint Force targeting coordination process, a precursor event to the nominal 72 hour ATO process. In addition, components would then submit the necessary air support requests for a specified Joint fire control area (instead of a specific target per se) for "near immediate" air support. The JFACC air apportionment recommendation to the JFC could then be used, doctrinally, for the apportionment of air assets and capabilities to planned strategic and operational targets (not necessarily "fixed" or stationary targets) and on-call air interdiction, close air support and time-sensitive target requests. Delineating the air apportionment decision into two categories would allow the JFACC to support the other Joint Force components with time-sensitive targeting capabilities while better deconflicting the strategic and operational missions. The benefit for the JFACC would be better control over dynamic re-tasking of pre-planned strategic or operational level

missions that occurs under the current process. This recommendation in the air apportionment process would need modified doctrine to establish the criteria between time-sensitive and the strategic/operational requirements for the Services that provide the assets and capabilities to the Joint fight.

The question of whether or not current Joint air doctrine is suitable for the Joint Force in the global war on terror should not be dismissed due to the scope of the problem or possible solution(s). One avenue to tackle the question is through analysis of Joint Force lessons learned for possible seams in doctrine or execution. Through the analysis of execution lessons learned and operational assessments by the Joint force will the seams that the asymmetric enemy could exploit be revealed. Those analyzed here, whether from a Special Operations Task Force or a component liaison element, provide illustrative examples for the Joint Force and the use of Joint air doctrine. The Joint doctrine structure is robust in its ability to draw out unity of effort from Joint Force components of Services bringing their forces with varying degrees of interoperable equipment and distinct doctrines to employ them. Unity of effort may be the key aspect of establishing Joint air component capabilities as part of the Joint Force, a common aspect in the illustrative examples used here.

The reaction of the Joint Force via the component Services in the respective areas of execution will determine the success or failure of a Joint Force in the global war on terror. Recent operations have produced a level of unity of effort that validates existing doctrine by exposing possible gaps in Joint execution. The solutions recommended or generated in the field are based upon the knowledge of Joint doctrine. These disconnects in execution, left unsolved or mitigated, provide the exploitable seams of the Joint Force

to the enemy. How the components of the Joint Force act upon these lessons learned will decide if the seams remain open or closed. Modifying Joint air doctrine may be done in parallel, but execution under the doctrine is both the source and solution to possible seams in the Joint Force.

NOTES

[1] Joint Chiefs of Staff, Doctrine for Joint Operations, Joint Pub 3-0, (Washington, DC: 10 September 2001), II-17.
[2] Ibid, II-16.
[3] Ibid, II-17.
[4] Ibid, II-11. Section 6 explains the various possible organizations of a Joint force.
[5] Joint Chiefs of Staff, Command and Control for Joint Air Operations, Joint Pub 3-30, (Washington, DC: 5 June 2003), III-17.
[6] Ibid, III-17.
[7] Mike Findlay, Robert Green, Eric Braganca, "Fires and Maneuver-Challenges on the Noncontiguous Battlefield," Air Land Sea Bulletin, 2003-1 (March 2002): 17. This paragraph summarizes the article and the ideas contained in it. The statements of ideas and viewpoints are the article's authors that pertain to this paper's subject matter.
[8] Ibid, 20.
[9] Ibid, 22.
[10] Thomas L. Kelly, John P. Andereasen, "Joint Fires- A BCD Perspective in Operation Iraqi Freedom," Field Artillery, (November-December 2003): 22.
[11] Ibid, 21.
[12] Joint Pub 3-30, III-19.
[13] Kelly, 24.
[14] Ibid.
[15] Ibid.
[16] Richard Lardner, "Army Criticism of OIF Targeting Way Off Base, Air Force Says," Inside the Army, 3 November 2003, available at http://insidedefense.com/secure/ defense_docnum.asp?f=defense_2002.ask&docnum=ARMY-15-44-3; Internet; accessed 26 April 2004.
[17] Ibid.
[18] Air Land Sea Application Center, Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets (Langley AFB, VA: April 2004), available at https://lad.dtic.mil/alsa/TST.htm, i.
[19] Ibid, II-3.
[20] Ibid.
[21] Joint Chiefs of Staff, Joint Doctrine for Targeting, Joint Pub 3-60, (Washington, DC: 17 January 2002), B-4.
[22] Ibid, B-5.
[23] Air Land Sea Application Center, II-7.
[24] Joint Center for Lessons Learned Final Report, by 10th Mtn Div, reporting, 6 June 2003 [database online]; UNCLASSIFIED excerpt available from http://jdl.jwfc.jfcom.smil.mil/ livelink?func=doc.viewdoc&nodeid=1045009; SIPRNET; accessed 27 April 2004.
[25] US Central Command, Joint Universal Lesson Learned System (JULLS), no. 41435-35131, CENTAF-HQ USAF, 13 April 2003, [database online]; UNCLASSIFIED excerpt available from http://recluse.centcom.smil.mil/jullssearch; SIPRNET; accessed 27 April 2004.
[26] Ibid, JULLS no. 42550-89192, USCENTCOM/J3, 25 April 2003.
[27] Ibid, JULLS no. 41436-06968, CENTAF-608 AOG, 13 April 2003. The recommendation is for a Combined Airlift Coordination Board to mimic the utility of the JFC's target coordination board in order to

minimize the current coordination required amongst several organizations before airlift requests are finally submitted to the CFACC.

[28] Ibid, JULLS no. 30140-14954, SOCCENT, 28 February 2002. The issue centered on the requests from aircrew to pass the coordinates of the location of friendly forces in the target area in order to give the aircrew situational awareness. Conversely, in close air support doctrine, especially while employing a weapon that is guided to target coordinates alone, friendly location is purposefully not included in the fire support instructions to the air asset. A tactical issue with operational if not strategic implications.

Bibliography

Air Land Sea Application Center, TST: Multi-Service Tactics, Techniques, and Procedures for Targeting Time-Sensitive Targets, April 2004. Manual online. Available from https://lad.dtic.mil/alsa/TST.htm.

Ballard, John R. and Steve Sifers, "JMETL: The Key to Joint Proficiency" Joint Forces Quarterly, Autumn 1995, 95-98.

Findlay, COL Mike, LTC Robert Green and MAJ Eric Braganca, "Fires and Maneuver – Challenges on the Noncontiguous Battlefield" The Air Land Sea Bulletin, Issue 2003-1, March 2002, 17-22.

Haugrud, Anthony, Gary Lehmann and Curtis Phillips, "Rethinking Joint Training" Joint Forces Quarterly, Winter 2000-2001, 66-70.

Hurley, Marcus, "JFACC: Taking the Next Step" Joint Forces Quarterly, Spring 1995, 60-65.

Joint Chiefs of Staff. Unified Action Armed Forces. Joint Pub 0-2. Washington, DC: 10 July 2001.

Joint Chiefs of Staff. Doctrine for Joint Operations. Joint Pub 3-0. Washington, DC: 10 September 2001.

Joint Chiefs of Staff. Command and Control for Joint Air Operations. Joint Pub 3-30. Washington, DC: 5 June 2003.

Joint Chiefs of Staff. Joint Doctrine for Targeting. Joint Pub 3-60. Washington, DC: 17 January 2002.

Joint Chiefs of Staff. Joint Task Force Planning Guidance and Procedures. Joint Pub 5-00.2. Washington, DC: 13 January 1999.

Kelly, LTC Thomas L. and LTC (ret) John P. Andreasen, "Joint Fires: A BCD Perspective in Operation Iraqi Freedom," Field Artillery, November-December 2003, 20-25.

Lambert, Geoffrey C. and Mark M. Huber, "Joint Shipboard Helicopter Operations" Joint Forces Quarterly, Winter 2000-2001, 83-88.

Lardner, Richard. "Army Criticism of OIF Targeting Way Off Base, Air Force Says" Inside the Army, 3 November 2003. Article online. Available from http://insidedefense.com/.

US Central Command. Joint Universal Lesson Learned System. Database online. UNCLASSIFIED excerpts available from http://recluse.centcom.smil.mil/jullssearch.

US Joint Forces Command. Joint Center for Lessons Learned Final Report. 10th Mountain Division. 6 June 2003. Database online. UNCLASSIFIED excerpt available from http://jdl.jwfc.jfcom.smil.mil/.

Whitlow, COL J.L. "JFACC: Who's in Charge?" Joint Forces Quarterly, Summer 1994, 64-70.